



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : **Mail Stop: RCE**  
Shinji KAJII et al. : **Confirmation No. 8610**  
Serial No. 10/634,829 : [Group Art Unit 1755]  
Filed August 6, 2003 : Examiner Karl E. Group]

HIGHLY HEAT-RESISTANT INORGANIC  
FIBER BONDED CERAMIC COMPONENT  
AND PROCESS FOR THE PRODUCTION  
THEREOF

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**PRELIMINARY REMARKS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In the Examiner's reasons for allowance, reference is made to (a) the claimed fiber bonded composite being of a specific surface structure and (b) having carbon containing grain boundaries of 1-100 nm.

The above reference to (a) is a correct reason for allowance, however, (b) is not correct and is, in fact, known in the prior art citations 1 and 2 below, the content of which is essentially described in paragraphs [0002]-[0004] of the present specification.

1. JP-A-09-52776 (referred to as "776" hereafter)

The inventors of '776 include Kenji MATSUNAGA who is also one of the inventors of the present invention. The Assignee of the present invention and '776 are the same, UBE INDUSTRIES, LTD.

Claim 1 of '776 discloses a fiber-bonded ceramic composed of inorganic fibers and an inorganic substance existing so as to fill interstices between the inorganic fibers, which ceramic

has layers with a thickness of 1 to 200 nm comprising amorphous and/or crystalline carbon, as boundary layers between the inorganic fibers and the inorganic substance.

The above inorganic fibers and the above inorganic substance are composed of almost the same constituents as those of the inorganic fibers and the inorganic substance of the present invention, respectively.

Therefore, the above reference to (b) in the Examiner's Reasons for Allowance is not correct.

2. U.S. 6,132,856 (referred to as "Ishikawa et al." hereinafter)

The inventors of Ishikawa et al. include Shinji KAJII, Kenji MATSUNAGA and Toshihiko HOGAMI who are also included in the inventorship of the present application.

The Assignee of the present application and Ishikawa et al. are the same, UBE INDUSTRIES, LTD.

Ishikawa et al. discloses a sintered SiC fiber-bonded material comprising inorganic fibers which are bonded material comprising inorganic fibers which are bonded nearly in the closest packing state and 1 to 50 nm boundary layers composed mainly of carbon. The above fiber-bonded material is composed of almost the same constituents as those of the inorganic fiber bonded ceramic component of the present invention.

Therefore, the above statement, (b) in the Examiner's Reasons for Allowance is not correct.

The feature of the inorganic fiber bonded ceramic component of the present invention is that the inorganic fiber bonded ceramic component has a curved surface and/or an inclined surface and the fibers are aligned in a surface. Owing to the above feature that the fibers are aligned in a surface shape, the component of the present invention is almost free from the occurrence of peeling of surface fibers or delamination and also has high surface smoothness and density.

Therefore, the above statement (a) of the Examiner's Reasons for Allowance is correct.

For example, Ishikawa et al. discloses a molding method at Col. 9, lines 15 to 25, as follows:

The above amorphous silicon carbide fiber was shaped into a unidirectionally aligned sheet-like material, and a laminate was prepared from the above sheet-like material such that each of laminate-forming layers had the same fiber direction. The laminate was set in a mold made of carbon and temperature-increased up to 1650°C in a hot press apparatus in which argon had been substituted, and the laminate was temperature-increased up to 1,900°C under a pressure of 50 Mpa to prepare a sintered SiC fiber bonded material.

It is clearly unobvious (and not possible) to obtain the inorganic fiber bonded ceramic component having the present invention's feature by the molding methods disclosed in Ishikawa et al. and '776.

Applicants acknowledge with appreciation the fact that the Examiner withdrew the Restriction Requirement of January 4, 2005 in allowing all of the claims of this application and it is considered that in view of the foregoing remarks, all of the claims of this application are still allowable.

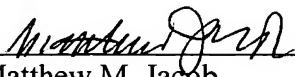
An early indication to this effect is respectfully requested and if the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

Shinji KAJII et al.

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TO CHARGE ANY DEFICIENCY IN THE  
FEES FOR THIS PAPER TO DEPOSIT  
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